CLAIMS

1. A apparatus for aligning an edge of optical components, comprising:

a base having an optical component positioning region for positioning a block of optical components, the block of optical components including a plurality of optical components positioned adjacent to one another; and

two or more alignment members adjacent to the optical component positioning region, at least one of the alignment members being movable relative to one or more alignment members positioned on an opposite side of the optical component positioning region.

2. The apparatus of claim 1, wherein the at least one movable alignment members is movable toward and away from an alignment member positioned on the opposing side of the optical component positioning region.

3. The apparatus of claim 1, wherein the at least one movable alignment members is configured to be moved so as to drive optical components positioned in the optical component positioning region against the alignment member positioned on the opposing side of the optical component.

4. The apparatus of claim 3, wherein the at least one movable alignment member and the alignment member positioned on the opposing side of the optical component are configured such that driving the optical components against the alignment member positioned on the opposing side of the optical component does not cause rotation of the optical components.

5. The apparatus of claim 1, wherein a component contact region of the at least one movable alignment member is parallel to a component contact region of the alignment member positioned on the opposing side of the optical component positioning region, the component contact region of an alignment member being the portion of the alignment member configured to contact the optical components.

6. The apparatus of claim 5, wherein at least one alignment member contracts to a line that serves as the component contact region.

7. The apparatus of claim 5, wherein the component contact regions are substantially perpendicular to the base.

8. The apparatus of claim 1, wherein at least one alignment member is fixed relative to the base.

9. The apparatus of claim 1, wherein at least one alignment member is selected from a group consisting of a ridge extending from the base and a flange extending from the base.

10. The apparatus of claim 1, wherein at least one movable alignment member includes an immobilizing device for immobilizing the alignment member relative to the base.

11. The apparatus of claim 1, further comprising:

one or more alignment devices configured to apply a downward pressure to optical components positioned on the optical component positioning region.

12. The apparatus of claim 1, further comprising: a plurality of optical components positioned in the optical component positioning region.

13. The apparatus of claim 12, wherein a bonding medium is positioned between at least two adjacent optical components.

14. The apparatus of claim 1, wherein the apparatus is constructed of a metal.

15. The apparatus of claim 14, wherein the apparatus is constructed of aluminum.

16. A method of smoothing facets on optical components, comprising:

forming a plurality of optical components into a block of optical components; and

smoothing one or more sides of the block of optical components, the one or more smoothed sides being at least partially defined by edges of the optical components.

17. The method of claim 16, wherein at least one of the edges defining the one or more smoothed sides include at least one facet.

18. The method of claim 16, wherein more than one of the edges defining the one or more smoothed sides include at least one facet and smoothing the one or more sides includes concurrently smoothing facets included in different edges.

19. The method of claim 16, wherein smoothing the one or more sides includes an moving an abrasive material relative to the one or more sides with the one or more sides being in contact with the abrasive material.

20. The method of claim 16, wherein smoothing the one or more sides includes an operation selected from the group consisting of polishing, lapping and buffing.

21. The method of claim 16, wherein smoothing the one or more sides includes immobilizing the block in a recess of a holder such that a portion of the block to be smoothed remains exposed.

22. The method of claim 21, wherein the holder holds the block such that the exposed portion of the block includes a side positioned at an angle to the longitudinal axis of the holder, the angle of the side being less than 90 degrees.

23. The method of claim 22, wherein the angle is about 75 and 88 degrees.

24. The method of claim 22, wherein the side is at least partially defined by the edge of a plurality of optical components.

25. The method of claim 16, wherein forming the plurality of optical components into a block includes stacking optical components on top of one another with a bonding medium positioned between adjacent optical components.

26. The method of claim 16, further comprising:

cooling the block of optical components after forming the block of optical components.

27. The method of claim 16, wherein forming the plurality of optical components into a block includes positioning in the plurality of optical components in a apparatus.

28. The method of claim 27, wherein forming the plurality of optical components into a block includes elevating the temperature of the apparatus.

29. The method of claim 16, wherein forming the block of optical components includes aligning at least one edge of the optical components.

30. The method of claim 16, wherein smoothing one or more sides of the block includes

31. A method of forming a block of optical components from a plurality of optical components, comprising:

positioning a plurality of optical components adjacent to one another with a bonding medium positioned between adjacent optical components; and

aligning at least one edge of the optical components.

32. The method of claim 31, wherein positioning a plurality of optical components adjacent to one another includes positioning the plurality of optical components on an alignment apparatus.

33. The method of claim 32, wherein the temperature of the alignment apparatus is elevated above room temperature before the plurality of optical components are positioned on the alignment apparatus.

34. The method of claim 32, wherein positioning the plurality of optical components on an alignment apparatus includes sequentially positioning the optical components on the alignment apparatus and positioning a bonding medium between at least a portion of adjacent optical components.

35. The method of claim 31, wherein aligning at least one edge of the optical components includes driving an edge of the optical components against an alignment member that is immobilized relative to a base.

36. The method of claim 31, wherein aligning at least one edge of the optical components includes positioning the optical components between alignment members and moving an alignment member so as to drive the at least one edge of the optical components against another alignment member.

37. A system for holding a block of optical components, comprising:

a base having a recess configured to receive the block of optical components, the bottom of the recess extending to an external side of the base; and

a cover configured to be positioned over the recess so as to clamp the block of optical components between the cover and the base.

38. The system of claim 37, wherein the recess has a geometry that is complementary to a geometry of a portion of the block of optical components.

39. The system of claim 37, wherein a bottom of the recess is positioned at an angle relative to a longitudinal axis of the holder, the angle being at least 1 degree.

40. The system of claim 39, wherein the angle is about 2 to 15 degrees.

41. The system of claim 37, wherein a side of the recess is positioned at an angle relative to a longitudinal axis of the holder, the angle being at least 1 degree.

42. The system of claim 41, wherein the angle is about 2 to 15 degrees.

43. The system of claim 37, further comprising:

a plurality of optical components formed into a block positioned in the recess such that a portion of the block extends from the recess.

44. The system of claim 37, wherein the recess is shaped such that the portion of the block extending from the recess includes a side of the block that is angled relative to a longitudinal axis of the holder, the angle being less than ninety degrees.

45. The system of claim 44, wherein the angle is about 88 to 75 degrees.